

Applicants: Nathan Ellis, James German, and Joanna Groden
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Amendments to the Claims:

Please cancel claim 11 without disclaimer or prejudice to applicants' right to pursue the subject matter of this claim in a future continuation or divisional application.

Please amend claims 12, 14-16, and 86 as set forth below.

1-11. (Canceled)

12. (Currently amended) The method of Claim ~~11~~ 86 wherein the subject is an embryo, fetus, newborn, infant or adult.

13. (Canceled)

14. (Currently amended) The method of Claim ~~11~~ 86 wherein the nucleic acid is DNA or RNA.

15. (Currently amended) The method of Claim ~~11~~ 86 wherein the presence of the mutated *BLM* gene is detected by one or more techniques selected from the group consisting of sequence analysis, restriction enzyme digestion analysis, hybridization and polymerase chain reaction.

16. (Currently amended) The method of Claim ~~11~~ 86 wherein the presence of the mutated *BLM* gene is detected by the presence of a gene product encoded by the mutated *BLM* gene.

17. (Original) The method of Claim 16 wherein the gene product is a protein.

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18. (Canceled)

19. (Original) The method of Claim 16 wherein the gene product is mRNA.

20. (Original) The method of Claim 19 wherein the mRNA is detected by one or more techniques selected from the group consisting of sequence analysis, hybridization and polymerase chain reaction.

21-85. (Canceled)

86. (Currently amended) The method of Claim 11,
A method for determining whether a human subject is a carrier of a mutated BLM
gene comprising detecting the presence or absence of a mutated BLM gene in nucleic acid
of said subject, wherein the mutated *BLM* gene comprises one or more of: (i) a deletion of nucleotides 631-633 of SEQ ID NO:72; (ii) a substitution of A with T at nucleotide 888 of SEQ ID NO:72; (iii) an insertion of A after nucleotide 1610 of SEQ ID NO:72; (iv) a substitution of A with G at nucleotide 2089 of SEQ ID NO:72; (v) a replacement of nucleotides ATCTGA at position 2281-2286 of SEQ ID NO:72 with nucleotides TAGATTC; (vi) a substitution of T with C at nucleotide 2596 of SEQ ID NO:72; and (vii) a substitution of G with C at nucleotide 3238 of SEQ ID NO:72.

87. (Previously presented) The method of Claim 86, wherein the mutated *BLM* gene comprises a deletion of nucleotides 631-633 of SEQ ID NO:72.

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88. (Previously presented) The method of Claim 86, wherein the mutated *BLM* gene comprises a substitution of A with T at nucleotide 888 of SEQ ID NO:72.

89. (Previously presented) The method of Claim 86, wherein the mutated *BLM* gene comprises an insertion of A after nucleotide 1610 of SEQ ID NO:72.

90. (Previously presented) The method of Claim 86, wherein the mutated *BLM* gene comprises a substitution of A with G at nucleotide 2089 of SEQ ID NO:72.

91. (Previously presented) The method of Claim 86, wherein the mutated *BLM* gene comprises a replacement of nucleotides ATCTGA at position 2281-2286 of SEQ ID NO:72 with nucleotides TAGATTC.

92. (Previously presented) The method of Claim 86, wherein the mutated *BLM* gene comprises a substitution of T with C at nucleotide 2596 of SEQ ID NO:72.

93. (Previously presented) The method of Claim 86, wherein the mutated *BLM* gene comprises a substitution of G with C at nucleotide 3238 of SEQ ID NO:72.